

Wound Biopsies of Atypical Wound Presentations Lead to the Diagnosis of Rare Disease States: a Case Study

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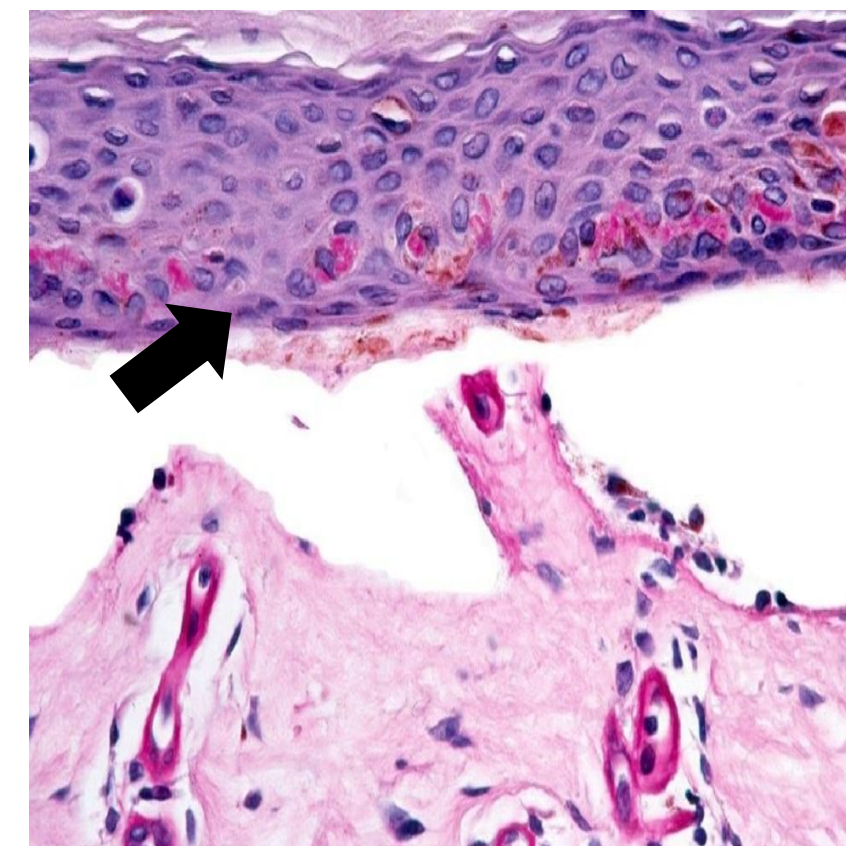
Introduction

- The prevalence of atypical wounds has not been studied extensively, but it has been estimated that 20% of all chronic wounds are due to unusual causes.
- As our population ages, clinicians are caring for patients with increased numbers of comorbidities and pathological processes that can contribute to the development of hard-to-heal wounds.
- Therefore, ability to identify and treat chronic wounds caused by uncommon etiologies is an important skill.
- Unfortunately, it can take years of clinical experience to master.
- To this argument, it is imperative that all wound care clinicians are knowledgeable about uncommon wound etiologies and the importance of wound biopsies as a diagnostic tool.
- The goal of this CME article is to introduce the clinical features of several types of atypical wounds and the utility of wound biopsies to make the appropriate diagnosis.

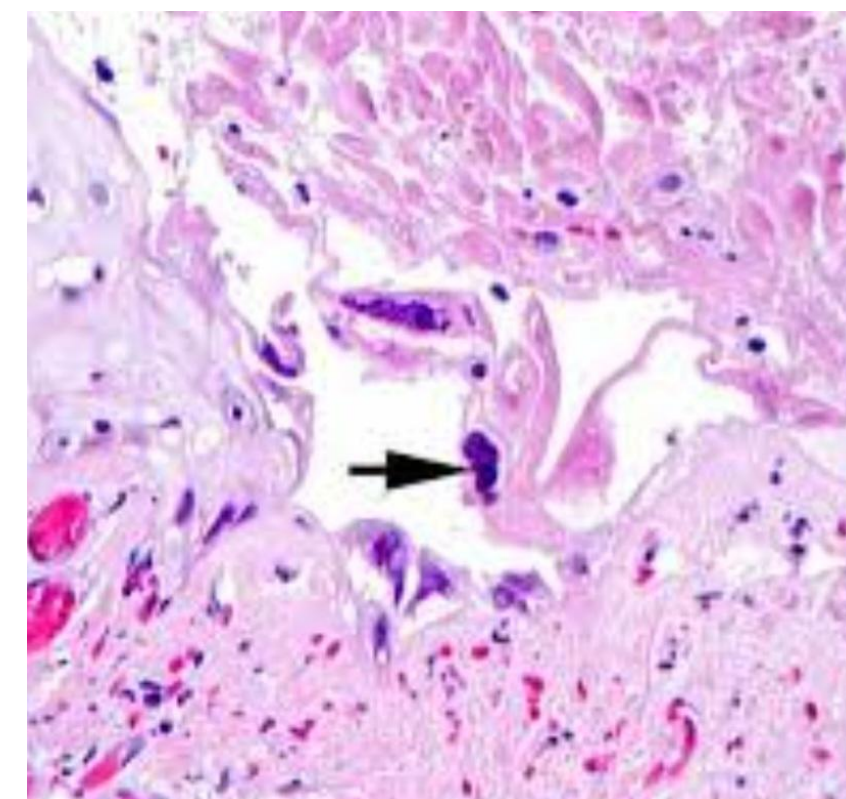
Methods

- This case series details the clinical and histological appearance of 3 atypical wounds: Porphyria Cutanea Tarda, Bullous Disseminated Herpes Zoster and Pancreatic Panniculitis.
- A detailed history and physical exam including medical, travel, recreational and occupational histories were obtained to assure an accurate diagnosis was made.
- In addition, a complete physical exam and wound assessment including wound measurement, location, staging, tissue character and color, odor, exudate quality and amount, peri-wound tissue appearance, and pain were noted for each patient.
- In each case, these chronic wounds persisted despite appropriate wound care treatments.
- Additional testing including tissue biopsies were performed to confirm the appropriate wound etiology

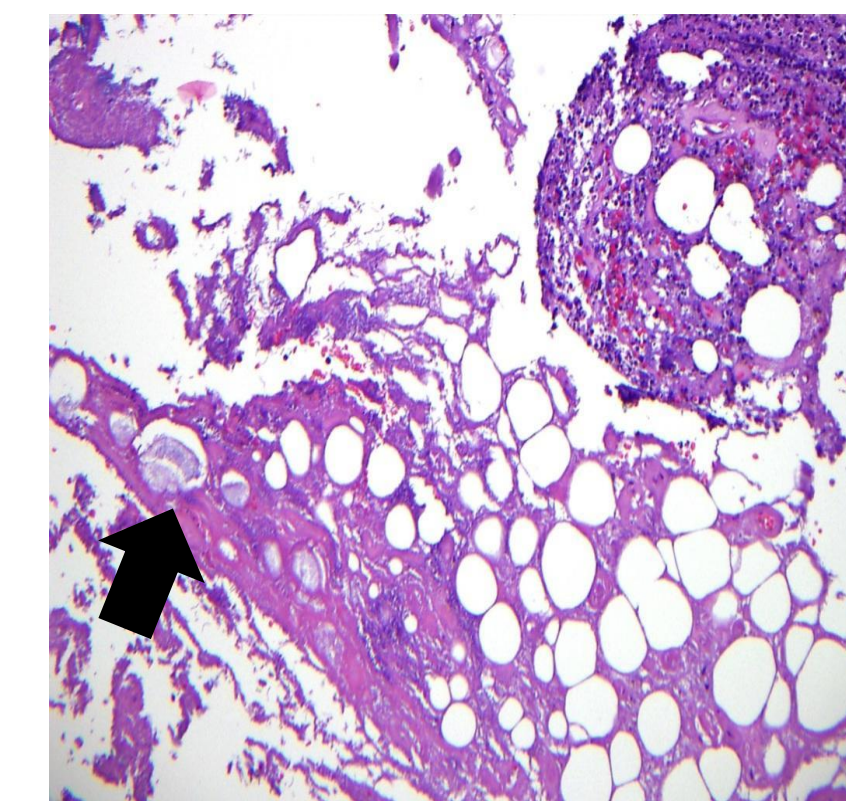
Case Studies



Linear segments of degenerated keratinocytes called caterpillar bodies seen in the basal layer



Large intraepidermal vesicle surrounded by inflammatory cell infiltrate



Ghost cells

Case 1 Porphyria Cutanea Tarda

88-year-old female presents with multiple partial thickness wounds on the extremities. No history of trauma or other inciting event.

PMH: Diverticulosis, CKD stage II, polyneuropathy, NIDDM, DJD, asthma, breast cancer, HTN and heart failure.

Wound Appearance: Thickness: Partial Thickness Exudate amount: Scant Exudate type: Sero-sanguineous Margin: Irregular/Undefined

Characteristics of tissue: partial thickness with light pink granulation

Periwound skin appearance: Friable with normal temperature

Treatment: Cleaned the wound using Wound cleanser. Applied skin barrier prep to periwound. Dressing consisted of antimicrobial nonadherent and bordered foam. Change twice weekly.

Wounds continued to develop and worsen.

Biopsy was performed to rule out bullous disorders

Histology was consistent with Porphyria Cutanea Tarda

Case 2 Bullous Disseminated Herpes Zoster

A 74-year-old male was initially evaluated in his home for assessment of a chronic non-healing wound on the sacrum.

Past medical history included hemiplegia following a spinal cord injury, GERD, arthritis, BPH, COPD, hypertension, PVD and obesity.

The wound has been present for over 4 months. Patient was noted to be non-ambulatory and bedbound. Upon initial assessment, the wound measured 2cm x 3cm x 0.5cm.

The wound base extends through subcutaneous tissue and is red and granular.

The periwound tissue displays mild maceration and there is epibole of the tissue appreciated at the wound edge.

No clinical signs and symptoms of infection were noted.

The diagnosis of a Stage 4 pressure injury was made. Treatment consisted of sharp debridement, followed by application of collagen to the wound base covered with boarded gauze.

Offloading of the area was achieved with an alternating pressure mattress, ROHO cushion and turning education provided to the caregiver.

The wounds continued to deteriorate despite the addition of the dietary supplement and course of antibiotics.

The patient was taken to surgery for a debridement and biopsy of the wound.

The histology report noted that the tissue specimen contained herpes viral inclusions. Immunohistochemical stains for VZV were positive. AFB, GMS and gram stains were negative for infectious organisms. Stay well,

Case 3 Pancreatic Panniculitis

This is a 38-year-old female who initially presented with fatigue and right lower extremity pain.

The patient's past medical history was significant for systemic lupus nephritis (SLE), end stage renal disease (ESRD) on hemodialysis, on anticoagulation with coumadin due to mitral valve replacement, cholecystectomy, chronic gastroesophageal reflux, colitis, venous insufficiency, anemia, and opioid abuse on methadone.

The lower extremity examination revealed multiple ill-defined full thickness ulcers with yellow purulent drainage, and erythematous and macerated borders throughout the medial and posterior aspects of the right lower leg. The left leg showed no edema or open wounds. The patient's hemodialysis catheter site was intact and nontender.

A punch biopsy of one of the right lower leg wounds was obtained. Histopathological examination revealed tissue necrosis, gram positive bacterial cocci, hemosiderin deposition, possible thrombosis of blood vessels, numerous neutrophils and ghost cells.

Stains were negative for fungus and subcutaneous vascular calcification. Therefore, calciphylaxis was ruled out as a possible mechanism for the patient's right lower leg wounds.

Results

- One of the first indications that a chronic wound may be atypical is that it lacks a history of an acute trauma, and it does not fit into a known clinical category.
- In this case series, these chronic ulcers exhibited random clinical features, histology, and location.
- Resistance to standard therapies and difficulty in diagnosing could have resulted in delayed treatment.
- Timely tissue biopsies and examination of histopathology revealed the presence of distinctive clinical features consistent with several extremely rare pathological states.

Discussion

- Atypical wounds are rare, and their pathophysiology is not well understood.
- The diagnosis and management of these ulcer types can often be a real challenge to clinicians.
- Tissue biopsy played a pivotal role in making the correct diagnosis in these cases. Best practice is to perform a tissue biopsy in all cases of refractory wounds.
- Additional microbiological, immunohistochemical and laboratory testing may be warranted to confirm the proper diagnosis.
- Wound progression is often unpredictable and wound care therapies are not standardized.
- Early suspicion an expert examination is of the utmost importance in the treatment of atypical wounds.
- A 'wait and see' attitude may be detrimental when dealing with complex atypical wounds.

References

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